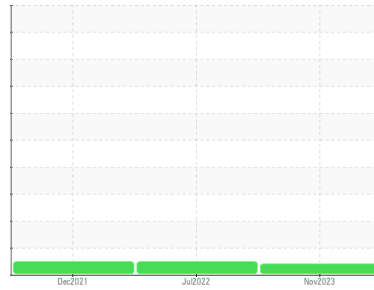




# OIL ANALYSIS REPORT

Sample Rating Trend



## VISCOSITY



Machine Id

**105**

Component

**Diesel Engine**

Fluid

**Diesel Engine Oil (--- GAL)**

### DIAGNOSIS

#### ▲ Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

Fuel content negligible. There is no indication of any contamination in the oil.

#### ▲ Fluid Condition

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

### SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>KFS0002896</b>	KFS0001553	KFS0001202
Sample Date	Client Info		<b>21 Nov 2023</b>	19 Jul 2022	01 Dec 2021
Machine Age	hrs	Client Info	<b>13177</b>	12585	12311
Oil Age	hrs	Client Info	<b>1000</b>	0	0
Oil Changed	Client Info		<b>Changed</b>	Changed	Changed
Sample Status			<b>ATTENTION</b>	NORMAL	NORMAL

### CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol	WC Method		<b>NEG</b>	NEG	NEG

### WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	<b>21</b>	9	9
Chromium	ppm	ASTM D5185m >20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m >2	<b>1</b>	<1	<1
Titanium	ppm	ASTM D5185m	<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m >2	<b>0</b>	0	6
Aluminum	ppm	ASTM D5185m >25	<b>4</b>	2	3
Lead	ppm	ASTM D5185m >40	<b>1</b>	1	2
Copper	ppm	ASTM D5185m >330	<b>2</b>	<1	1
Tin	ppm	ASTM D5185m >15	<b>&lt;1</b>	<1	<1
Antimony	ppm	ASTM D5185m	<b>---</b>	---	0
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	<1
Cadmium	ppm	ASTM D5185m	<b>&lt;1</b>	0	<1

### ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>9</b>	50	496
Barium	ppm	ASTM D5185m	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	<b>55</b>	60	116
Manganese	ppm	ASTM D5185m	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	<b>832</b>	832	468
Calcium	ppm	ASTM D5185m	<b>1056</b>	1105	1553
Phosphorus	ppm	ASTM D5185m	<b>830</b>	997	1137
Zinc	ppm	ASTM D5185m	<b>1139</b>	1149	1302
Sulfur	ppm	ASTM D5185m	<b>3544</b>	3096	3166

### CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>9</b>	6	11
Sodium	ppm	ASTM D5185m	<b>2</b>	1	2
Potassium	ppm	ASTM D5185m >20	<b>2</b>	1	2
Fuel	%	ASTM D3524 >6.0	<b>2.5</b>	<1.0	<1.0

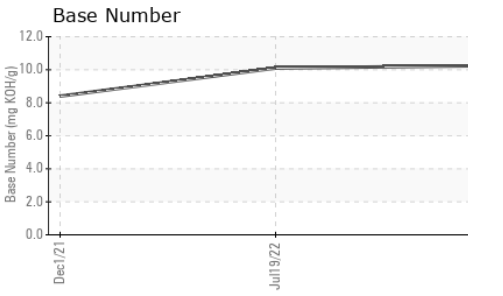
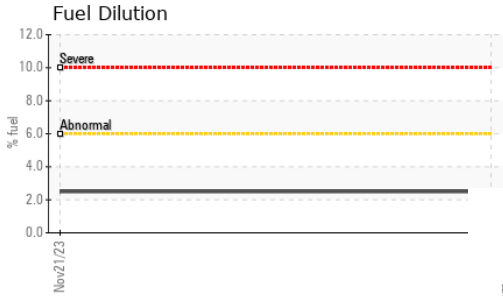
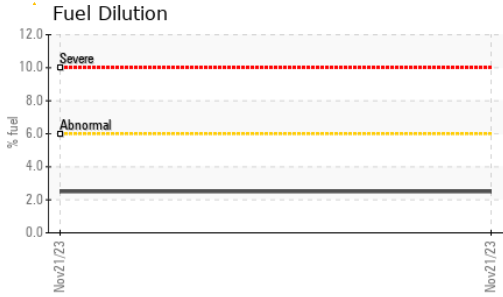
### INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	<b>1.1</b>	0.7	0.5
Nitration	Abs/cm	*ASTM D7624 >20	<b>6.9</b>	6.3	5.7
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>19.4</b>	19.8	21.5

### FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>13.2</b>	13.8	15.1
Base Number (BN)	mg KOH/g	ASTM D2896	<b>10.25</b>	10.1	8.40

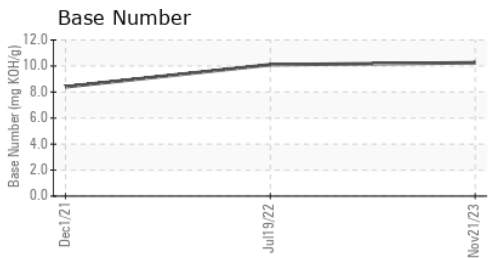
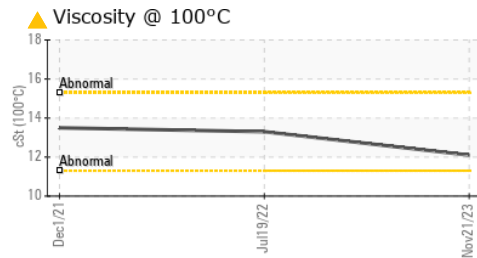
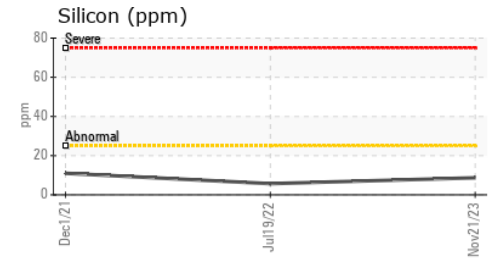
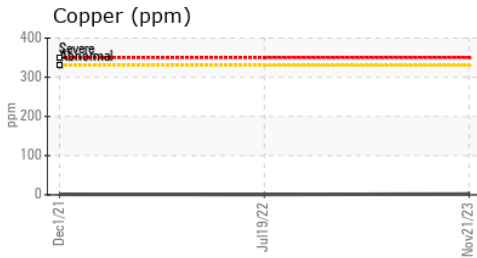
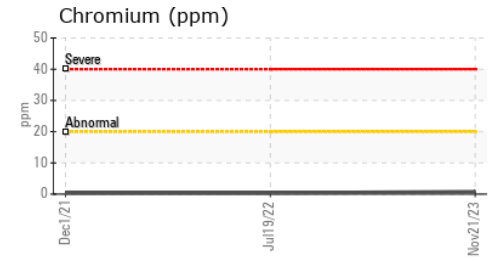
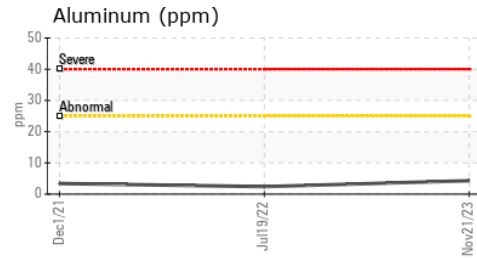
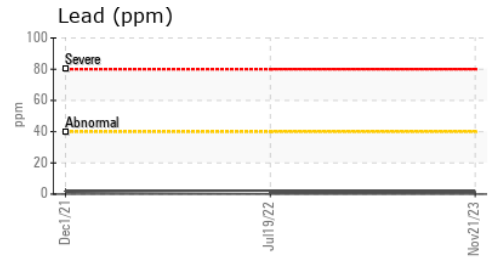
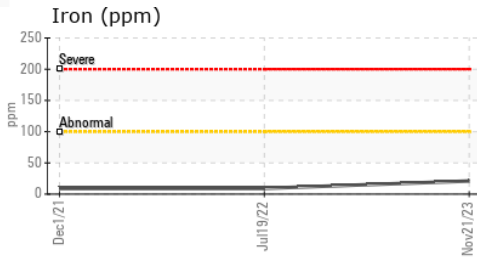
# OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	<span style="color: red;">▲</span> 12.1	13.3	13.5

### GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KFS0002896 **Received** : 24 Nov 2023  
**Lab Number** : 06017536 **Diagnosed** : 01 Dec 2023  
**Unique Number** : 10756680 **Diagnostician** : Jonathan Hester  
**Test Package** : MOB 2 ( Additional Tests: FUELDILUTION, PercentFuel )

**HARNES LLC**  
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 US 38401  
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 T: (931)797-5353  
 F:

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)